6 REFERENCES

- American Water Works Association (AWWA). 1998. Standard Methods for the Examination of Water and Wastewater, 20th Edition. American Public Health Association, American Water Works Association and Water Environment Federation.
- Boltz, David F., and James A. Howell. 1979. Colorimetric Determination of Nonmetals. John Wiley & Sons. New York.
- Buxton, G., et al., 1988. "Critical Review of Rate Constants for Reactions of Hydrated Electrons, Hydrogen Atoms and Hydroxyl Radicals (□OH/□O) in Aqueous Solution." Journal of Physical and Chemical Reference Data. Volume 17. Pages 513to886.
- Code of Federal Regulations (CFR). 1992. Title 40. Part 136.
- Cooper, W.J., D.E. Meacham, M.G. Nickelsen, K. Lin, D.B. Ford, C.N. Kurucz, and T.D. Waite. 1993. "The Removal of Tri-(TCE) and Tetrachloroethylene (PCE) from Aqueous Solution Using High Energy Electrons." Journal of the Air Waste Management Association. Volume 43. Pages 1358-1366.
- Cooper, W.J., E. Cadavid, M.G. Nickelsen, K. Lin, C.N. Kurucz, and T.D. Waite. 1993. "Removing THMs From Drinking Water Using High-Energy Electron-Beam Irradiation." Journal of the American Water Works Association. Volume 85 (September). Pages 106-112.
- Cooper, W.J., K.L. Sawal, R.A. Slifker, M.G. Nickelsen, C.N. Kurucz, and T.D. Waite. 1995. "Precursor Removal from Natural Waters Using an Innovative Treatment Process." Disinfection By-Products in Water Treatment: The Chemistry of Their Formation and Control. R.A. Minear and G.L. Amy, Editors.
- Cooper, W.J., M.G. Nickelsen, D.E. Meacham, T.D. Waite, and C.N. Kurucz. 1992. "High Energy Electron Beam Irradiation: An Advanced Oxidation Process for the Treatment of Aqueous Based Organic Hazardous Wastes." Water Pollution Research Journal of Canada. Volume 27. Pages 69-95.
- Cooper, W.J., G. Leslie, P.M. Tornatore, W.Hardison and P.A. Hajali. 2000. MtBE and Priority Contaminant Treatment with High Energy Electron Beam Injection. In Chemical Oxidation and Reactive Barriers, Eds., G.B. Wickramanayake, A.R. Gavaskar and A.S.C. Chen. 2(6): 209-216 (Battelle Press).
- Cooper, W.J., T. Tobien, S.P. Mezyk, J.W. Adams, M.G. Nickelsen, K.E. O'Shea, G. Inclan, P.M. Tornatore, P. Hajali and D.J. Weidman. 2001. The Electron Beam Process For The Destruction of MtBE. In Oxygenates in Gasoline: Environmental Aspects. Eds. A. F.

- Diaz and D. Drogos, ACS Symposium Series 799, American Chemical Society, Washington, DC. P. 153-164.
- Cooper, W.J., M.G. Nickelsen, R.V. Green and S.P. Mezyk. 2002. The removal of naphthalene from aqueous solutions using high energy electron beam irradiation. Rad. Phys. Chem. (in press).
- Evans, G. 1990. "Estimating Innovative Treatment Technology Costs for the SITE Program." Journal of the Air and Waste Management Association. Volume 40, No. 7. July.
- Farooq, S., C.N. Kurucz, T.D. Waite, and W.J. Cooper. 1993. "Disinfection of Wastewaters: High Energy Electron vs Gamma Irradiation." Water Research. Volume 27. Pages 1177-1184.
- Gehringer, P., and otherset al.,. 1988. "Decomposition of Trichloroethylene and Tetrachloroethylene in Drinking Water by a Combined Radiation/Ozone Treatment." Water Research. Volume 22. Page 645.
- Hardison, D.R., W.J. Cooper, S.P. Mezyk and D.M. Bartels. 2002. The Free Radical Chemistry of t-Butyl Formate: Rate Constants for Hydroxyl Radical, Hydrated Electron and Hydrogen Atom Reaction in Aqueous Solution. Rad. Phys. Chem. (In press).
- Kim, D.K., K.E. O'Shea and W.J. Cooper. 2002. The Degradation of MtBE and Related Gasoline Oxygenates in Aqueous Media by Ultrasound Irradiation. ASCE Journal of Environ. Engineer. 128: 806-812.
- Kurucz, C.N., T.D. Waite, W.J. Cooper, and M.G. Nickelsen. 1991a. "Full-Scale Electron Beam Treatment of Hazardous Wastes—Effectiveness and Costs." Proceedings of the 45th Annual Purdue University Industrial Waste Conference. Lewis Publishers, Inc. Pages 539-545.
- Kurucz, C.N., T.D. Waite, W.J. Cooper and M.G. Nickelsen. 1991b. High-Energy Electron Beam Irradiation of Water, Wastewater and Sludge, in Advances in Nuclear Science and Technology, Volume 22, J. Lewins and M. Becker, Eds., Plenum Press, N.Y., pp 1-43.
- Kurucz, C.N., T.D. Waite, W.J. Cooper, and M.G. Nickelsen. 1995a. "Empirical Empirical Models for Estimating the Destruction of Toxic Organic Compounds Utilizing Electron Beam Irradiation at Full Scale." Radiation Physics and Chemistry. Volume 45. Pages 805-816.

- Kurucz, C.N., T.D. Waite, and W.J. Cooper. 1995. "The The Miami Electron Beam Research Facility: A Large Scale Wastewater Treatment Application." Radiation Physics and Chemistry. Volume 45. Pages 299-308.
- Lin, K., W.J. Cooper, M.G. Nickelsen, C.N. Kurucz, and T.D. Waite. 1995 (in press). "The The Removal of Aqueous Solutions of Phenol at Full Scale Using High Energy Electron Beam Irradiation." Applied Radiation and Isotopes. 46: 1307-1316.
- Mak, F.T., W.J. Cooper, C.N. Kurucz, M.G. Nickelsen, and T.D. Waite. 1995. "Removal of Chloroform from Drinking Water Using High Energy Electron Beam Irradiation." Disinfection By-Products in Water Treatment: The Chemistry of Their Formation and Control. R.A. Minear and G.L. Amy, Editors. pp.131-150.
- Mak, F.T., S. Zele, W.J. Cooper C.N. Kurucz, T.D. Waite and M.G. Nickelsen. 1997. Kinetic Modeling of Carbon Tetrachloride, Chloroform, and Methylene Chloride Removal from Aqueous Solution using the Electron Beam Process. Water Research 31: 219-228.
- Mezyk, S.P., W.J. Cooper, D.M. Bartels, K.E. O'Shea and T. Wu. 2001. Radiation Chemistry of Alternative Fuel Oxygenates: Substituted Ethers. J. Phys. Chem. Part A 105: 3521-3526.
- Nickelsen, M.G., W.J. Cooper, K. Lin, C.N. Kurucz, and T.D. Waite. 1994. "High Energy Electron Beam Generation of Oxidants for the Treatment of Benzene and Toluene in the Presence of Radical Scavengers." Water Research. Volume 28. Pages 1227-1237.
- Nickelsen, M.G., W.J. Cooper, T.D. Waite, and C.N. Kurucz. 1992. "Removal of Benzene and Selected Alkyl-Substituted Benzenes from Aqueous Solution Utilizing Continuous High-Energy Electron Irradiation." Environmental Science & Technology. Volume 26. Pages 144 to 152.
- Nickelsen, M.G., D.C. Kajdi, W.J. Cooper, C.N. Kurucz, T.D. Waite, F. Gensel, H. Lorenzl, and U. Sparka. 1998. Field Application of a Mobile 20-kW Electron Beam Treatment System on Contaminated Groundwater and Industrial Wastes. In Environmental Applications of Ionizing Radiation, W.J. Cooper, R.D. Curry and K.E. O'Shea, Eds., John Wiley and Sons, Inc. N.Y. 451-466.
- Nickelsen, M..G., W.J. Cooper, K.E. O'Shea, M. Aguilar, D.V. Kalen, C.N. Kurucz and T.D. Waite. 1998. The Elimination of Methane Phosphonic Acid, Dimethy Ester (DMMP) from Aqueous Solutions Using 60Co-γ and Electron Beam Induced Radiolysis: A Model Compound for Evaluating the Effectiveness of the E-Beam Process in the Destruction of Organophosphorus Chemical Warfare Agents. J. Adv. Oxid.. Technol.3:43-54.
- Nicklesen, M.G. 2002. Personal Communication to Greg Swanson, Tetra Tech. September 12.

- O'Shea, K.E., D.K. Kim, T. Wu, W.J. Cooper and S.P. Mezyk. 2002. Degradation of MtBE/BTEX Mixtures by Gamma Radiolysis: A Kinetic Modeling Study. Rad. Phys. Chem. (In press).
- O'Shea, K.E., T. Wu and W.J. Cooper. 2001. TiO2 Photocatalysis of Gasoline Oxygenates. Kinetic Parameters and Effects of Catalyst Types and Loading on the Degradation of Methyl t-Butyl Ether. 2001. In Oxygenates in Gasoline: Environmental Aspects. Eds. A.F. Diaz and D. Drogos. ACS Symposium Series 799, American Chemical Society, Washington, DC. p. 165-176.
- Siddiqui M., G.L. Amy, W.J. Cooper, C.N. Kurucz, T.D. Waite and M.G. Nickelsen. 1996a. Bromate Removal by High Energy Electron Beam Process (HEEB). J. Amer. Water Works Assoc. 88(10): 90-101.
- Siddiqui M., G.L. Amy, W.J. Cooper. 1996b. Bromate Ion Removal by Electric-Arc Discharge and High Energy Electron Beam Processes, in Water Disinfection and Natural Organic Matter, R.A. Minear and G.L. Amy, Eds, American Chemical Society, Symposium Series 649, Washington, D.C. 366 -382.
- Stearns, Conrad, Schmidt (SCS) and Landau Associates. 1985. Initial Assessment Study of Naval Construction Battalion Center, Port Hueneme, California.
- Summers, et al., 1996. Journal of the American Water Works Association. Volume 88. No 6. Page 80.
- Tornatore, P.M., S.T. Powers, W.J. Cooper and E.G. Isacoff. 2000. Emerging Treatments for MtBE Synthetic Adsorbents and High Energy Electron Injection. In Chemical Oxidation and Reactive Barriers, Eds., G.B. Wickramanayake, A.R. Gavaskar and A..S.C. Chen. 2(7): 57-64 (Battelle Press).
- U.S. Department of Energy (DOE). 1988. Radioactive Waste Management Order. DOE Order 5820.2A. September.
- U.S. Environmental Protection Agency (EPA). 1987a. Alternate Concentration Limit (ACL) Guidance. Part 1: ACL Policy and Information Requirements. EPA/530/SW-87/017.
- EPA. 1987b. Joint EPA-Nuclear Regulatory Agency Guidance on Mixed Low-Level Radioactive and Hazardous Waste. Office of Solid Waste and Emergency Response (OSWER) Directives 9480.00-14 (June 29), 9432.00-2 (January 8), and 9487.00-8. August.
- EPA. 1988a. Protocol for a Chemical Treatment Demonstration Plan. Hazardous Waste Engineering Research Laboratory. Cincinnati, Ohio. April.

- EPA. 1988b. CERCLA Compliance with Other Environmental Laws: Interim Final. OSWER. EPA/540/G-89/006. August.
- EPA. 1989. CERCLA Compliance with Other Laws Manual: Part II. Clean Air Act and Other Environmental Statutes and State Requirements. OSWER. EPA/540/G-89/006. August.
- EPA. 1992. Electron Beam Treatment for Removal of Trichloroethylene and Tetrachloroethylene from Streams and Sludge. Emerging Technology Bulletin. EPA/540/F-92/009. October.
- EPA. 1993. Electron Beam Treatment for the Removal of Benzene and Toluene from Aqueous Streams and Sludge. Emerging Technology Bulletin. EPA/540/F-93/502. April.
- EPA. 1995. Methods for the Determination of Organic Compounds in Drinking Water, EPA 600/4-88/039. With Supplements II (1992) and III (1995).
- EPA. 1996. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Laboratory Manual, Volumes 1A through 1C, and Field Manual, Volume 2. SW-846, Third Edition and Update III, EPA document control no. 955-001-00000-1 Office of Solid Waste. September.
- EPA. 1997. High Voltage Electron Beam Technology. Innovative Technology Evaluation Report. EPA/540/R-96/504. April.
- EPA. 1998a. Methods for the Chemical Analyses of Water and Wastes. EPA 600/4-79-020 and Subsequent EPA-600/4 Technical Editions. Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
- Waite, T.D., W.J. Cooper, C.N. Kurucz, R. Narbaitz, and J.H. Greenfield. 1992. "Full Scale Treatments of Wastewater Effluent with High Energy Electrons." Chemistry for Protection of the Environment 1989. Elsevier, New York. Pages 563-571.
- Wang, T., T.D. Waite, C.N. Kurucz, and W.J. Cooper. 1994. Oxidant Reduction and Biodegradability Improvement of Paper Mill Effluent by Irradiation." Water Research. Volume 28. Pages 237-241.
- Wu, T., V. Cruz, S.P. Mezyk, W.J. Cooper and K.E. O'Shea. 2002. Gamma Radiolysis of Methyl t-Butyl Ether (MtBE). A Study of Hydroxyl Radical Mediated Reaction Pathways. Rad. Phys. Chem. (In press).
- Zele, S. M.G. Nickelsen, W.J. Cooper, C.N. Kurucz and T.D. Waite. 1998. Modeling Kinetics of Benzene, Phenol and Toluene Irradiation in Water using the High Energy Electron-Beam

Process. In Environmental Applications of Ionizing Radiation, W.J. Cooper, R.D. Curry and K.E. O'Shea, Eds., John Wiley and Sons, Inc. N.Y. 395-415.